

## **REMARKS**

Applicants thank the Examiner for the careful review of the present application and add new claims 21-26. The newly added claims introduce no new matter and are fully supported by the specification. Accordingly, Applicants respectfully request examination of pending claims 1-26.

### **Claim Rejections Under 35 U.S.C. § 102(b)**

The Examiner rejected claims 1-6 under 35 U.S.C. § 102(b) as being anticipated by Gilbert et al. (U.S. Patent No. 5,121,498). Applicants respectfully traverse.

Gilbert et al. discloses a *single sequencer stack* 74 accessed by a top of stack (TOS) and stack pointer 82, with an operation that sends an error signal when the stack pointer overflows or underflows (col. 17, lines 33-43). Thus, Gilbert et al. teaches that a single stack has underflow and overflow operations. In contrast, independent claim 1 recites the creation of “a pre-loop structure...a main loop structure...and a post-loop structure.” Further, the pre-loop structure tests for underflow, the post-loop structure tests for overflow and the main loop cannot produce an underflow or overflow.

Because independent claim 1 recites three structures such that one structure tests for underflow, a second structure tests for overflow and a third structure does not test for underflow or overflow, the *single stack structure that tests for both underflow and overflow* as taught by Gilbert et al. cannot anticipate the Applicants’ invention. Accordingly, Applicants respectfully submit that independent claim 1 is allowable.

Regarding dependent claims 2-6, because the dependent claims depend from the allowable independent claim, the dependent claims are allowable for the same

reason. Thus, Applicants respectfully request withdrawal of the 35 U.S.C. § 102(b) rejection.

**Claim Rejections Under 35 U.S.C. § 103(a)**

The Examiner rejected claims 7-20 under 35 U.S.C. § 103(a) as being unpatentable over Gilbert et al. as applied to claim 1, in view of Cartwright, Jr. (U.S. Patent No. 6,075,942). Applicants respectfully traverse.

Specifically, because Gilbert et al. does not teach the three recited structures in independent claims 1, 7 and 15, Gilbert et al. singly or in combination with Cartwright, Jr. cannot teach or suggest how to use three structures such that one structure tests for underflow, a second structure tests for overflow and a third structure does not test for underflow or overflow. Accordingly, Applicants respectfully submit that the independent claims are allowable. Further because claims 8-14 and 16-20 depend from the allowable independent claims, the dependent claims are allowable for the same reason. Thus, Applicants respectfully request withdrawal of the 35 U.S.C. § 103(a) rejection.

**Newly Added Claims**

Applicants introduce no new matter by way of newly added claims 21-26. Original claims 1-20 recite loop structures and methods for range check elimination via loop optimization. In another embodiment of the present invention, loop optimization can occur with a loop tree structure. Particularly, the specification discloses, "the optimizer 304 builds loop tree structures for use in loop optimization (page 14, line 2)." Further, "Figure 4 shows a method 304 for performing loop optimizations (page 14, line 10)." Specifically, in operation 410, loop transformations

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occur (page 16, lines 16-17). Loop transformations can include range check elimination (RCE) (page 16, lines 20-21), which remove "range checks from the main body of the loop structures via iteration splitting (page 17, lines 8-9)." Accordingly, because the specification fully supports the newly added claims, Applicants introduce no new matter by way of the newly added claims.

Applicants respectfully request a Notice of Allowance based on the foregoing remarks. If the Examiner has any questions concerning the present amendment, the Examiner is kindly requested to contact the undersigned at (408) 749-6900. If any other fees are due in connection with filing this amendment, the Commissioner is also authorized to charge Deposit Account No. 50-0805 (Order No. SUNMP018). A copy of the transmittal is enclosed for this purpose.

Respectfully submitted,  
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